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Computer modeling of the automated tests of diesel engines various conditions of their operation

Zubkov E.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2016 IEEE.The mathematical model of the diesel engine is offered. This model allows carrying out computer modeling modes of behavior of the diesel engine. The model allows considering influence of different operating conditions of the diesel engine. Increase in number of the considered external factors expands applicability of model, but significantly raises the price of operation on its working off and complexes determination of area of adequacy. When designing such difficult systems, there are tasks requiring research of regularities of their functioning. At finishing such systems, a full-scale experiment is almost inadmissible because of the enormous growth of expenses of time and means. It requires not only increases of accuracy of engineering calculations, but also a considerable extension of used methods, especially mathematical simulation. Calculation of parameters of a mathematical model is performed by means of an artificial neural network. For training, the algorithm of the reverse distribution of an error was selected, which is applicable in the solution of a big circle of tasks. It reduces an error at receiving coefficients considerably.

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Keywords

diesel, engine, model, simulation, test

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